

ABSTRACT

A thermal treatment system including a heat applying element for generating thermal doses for ablating a target mass in a patient, a controller for controlling thermal dose properties of the heat applying element, an imager for providing preliminary 5 images of the target mass and thermal images during the treatment, and a planner for automatically constructing a treatment plan, comprising a series of treatment sites that are each represented by a set of thermal dose properties. The planner automatically constructs the treatment plan based on input information including one or more of a volume of the target mass, a distance from a skin surface of the patient to the target mass, a set of default 10 thermal dose prediction properties, a set of user specified thermal dose prediction properties, physical properties of the heat applying elements, and images provided by the imager. The default thermal dose prediction properties are preferably based on a type of clinical application and include at least one of thermal dose threshold, thermal dose prediction algorithm, maximum allowed energy for each thermal dose, thermal dose 15 duration for each treatment site, cooling time between thermal doses, and electrical properties for the heat applying element. The user specified thermal dose prediction properties preferably include at least one or more of overrides for any default thermal dose prediction properties, treatment site grid density; and thermal dose prediction properties not specified as default thermal dose prediction properties from the group comprised of thermal 20 dose threshold, thermal dose prediction algorithm, maximum allowed energy for each thermal dose, thermal dose duration for each treatment site cooling time between thermal doses, and electrical properties for the heat applying element.